SENSORY · OPHTHALMOLOGIC · REFRACTIVE ERRORS

Myopia vs Hyperopia vs Presbyopia

A side-by-side NGN NCLEX 2026 study reference for the three most-tested refractive errors — focused on pathophysiology, corrective lenses, patient teaching, and the clinical-judgment cues that separate similar-looking choices on test day.

NCLEX 2026 · NCJMM Aligned | Health Promotion · Physiological Adaptation | Sensory / Vision

SRC **Source disclosure:** This topic was not present in the uploaded personal notes. Content has been compiled from standard NCLEX references — Saunders Comprehensive Review for the NCLEX-RN (2026), ATI Adult Medical-Surgical Nursing, Lippincott Manual of Nursing Practice, and the American Academy of Ophthalmology (AAO) clinical guidelines on refractive error correction.

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DEFINITION · OVERVIEW

What is a refractive error?

A **refractive error** occurs when the eye cannot bend (refract) incoming light to focus a sharp image precisely on the **retina**. The result is blurred vision — at distance, up close, or both. Refractive errors are **not** diseases; they are normal anatomical or age-related variations that are **highly correctable** with lenses or refractive surgery.

- **Myopia** — image focuses *in front of* the retina → distant objects blur.
- **Hyperopia** — image focuses *behind* the retina → near objects blur.
- **Presbyopia** — age-related *loss of lens elasticity* → cannot accommodate for near vision (begins ~age 40).

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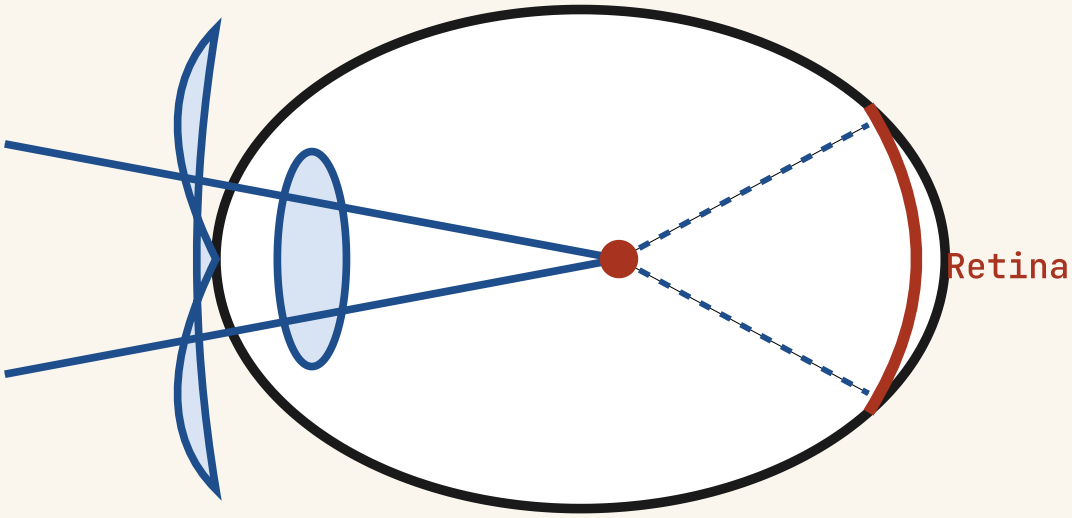
PATHOPHYSIOLOGY · SIMPLIFIED

Where does the light land?

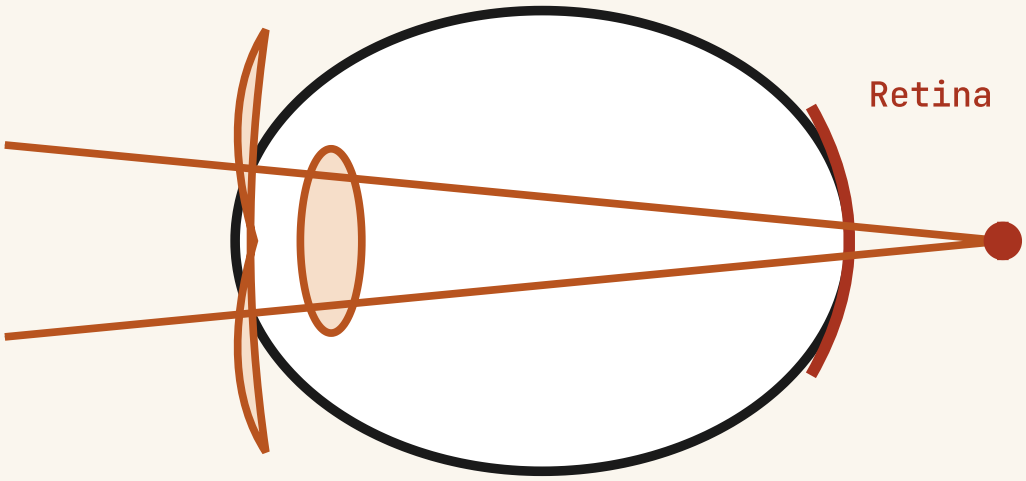
MYOPIA — FOCUS FALLS SHORT



FOCAL POINT IN FRONT OF RETINA

Eyeball too **long** OR cornea too **curved** → light converges before reaching the retina.

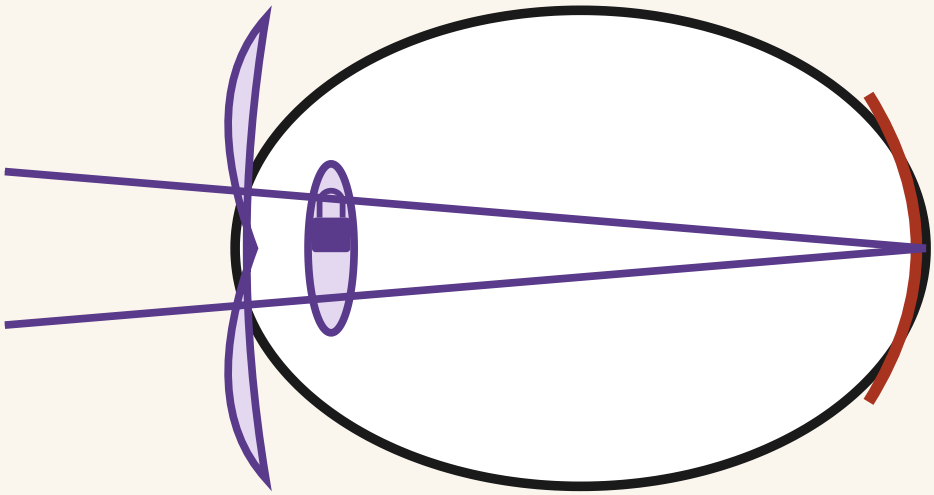
HYPEROPIA — FOCUS OVERSHOOTS



FOCAL POINT BEHIND RETINA

Eyeball too **short** OR cornea too **flat** → light has not yet converged when it hits the retina.

PRESBYOPIA — LENS STIFFENS WITH AGE



RIGID LENS
CANNOT ACCOMMODATE FOR NEAR

Lens loses elasticity → ciliary muscle can no longer change lens shape to focus on close objects.

Key concept → Normal vision requires light to land *exactly* on the retina (emmetropia). Anything that changes **axial length**, **corneal curvature**, or **lens elasticity** shifts the focal

> point and creates a refractive error.

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AT-A-GLANCE · SIDE-BY-SIDE

The three conditions compared

Myopia

Nearsightedness

"sees Near"

ANATOMY	Eyeball too long OR cornea too steep
FOCAL POINT	In FRONT of retina
BLUR	Distance vision is blurry; near vision is clear
ONSET	Childhood / adolescence; often worsens during growth
RISK FACTORS	Family history, prolonged close work, low outdoor time
CORRECTION	− (concave) lenses to diverge light

Hyperopia

Farsightedness

"sees Far"

ANATOMY	Eyeball too short OR cornea too flat
FOCAL POINT	BEHIND the retina
BLUR	Near vision is blurry; distance vision usually clear (in younger pts)
ONSET	Often present at birth; may be masked by accommodation in youth
RISK FACTORS	Genetics; symptoms unmask with age
CORRECTION	+ (convex) lenses to converge light

Presbyopia

Aging eye

"presbus" = old

ANATOMY	Loss of lens elasticity + weakened ciliary muscle
FOCAL POINT	Cannot adjust for near (failed accommodation)
BLUR	Near vision blurs; arms-length reading position
ONSET	Begins ~age 40; universal aging change
RISK FACTORS	Aging — affects everyone eventually
CORRECTION	**Bifocals** reading glasses or progressives

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SIGNS & SYMPTOMS

What the client reports

Myopia

- Difficulty seeing the board, signs, TV from across the room
- Squinting to see at a distance
- Sitting close to screens / holding objects close
- Headaches after distance viewing
- Eye strain when driving (especially at night)

Sudden vision changes, flashes, floaters, or curtain-like shadow → URGENT (rule out retinal detachment — higher risk in high myopia)

Hyperopia

- Difficulty reading or focusing on close work
- Eye strain, frontal headaches after near tasks
- Blurred near vision; aching or burning eyes
- Children: poor school performance, avoiding reading
- Younger patients may compensate via accommodation (asymptomatic at first)

Acute eye pain + nausea + halos around lights → URGENT (hyperopic anatomy is a risk factor for acute angle-closure glaucoma)

Presbyopia

- Holding reading material at arm's length
- Difficulty reading small print, menus, phone screens
- Needing brighter light to read
- Eye fatigue or headaches after near work
- Typical onset around age 40–45; progresses gradually

New onset of near-vision blur in a younger client (<35) → investigate other causes (diabetes, medications, accommodative spasm)

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PRIORITY NURSING INTERVENTIONS

What the nurse does — Safety first

ASSESS

- ✓ Obtain visual acuity using Snellen chart at 20 feet (distance) and Rosenbaum/Jaeger card at 14 inches (near)
- ✓ Ask about onset, progression, family history, occupation, hobbies (screen / reading load)
- ✓ Screen for red-flag symptoms: flashes, floaters, sudden loss, halos, eye pain, headache + nausea
- ✓ Identify barriers to care: cost of glasses, transportation to optometry visits, literacy

SAFETY

- ✓ Driving safety — do NOT drive without prescribed corrective lenses; assess night driving difficulty
- ✓ Fall risk in older adults with presbyopia / multifocal lenses (depth-perception changes on stairs)
- ✓ Workplace and sports safety eyewear when indicated
- ✓ Childhood myopia: ensure the child wears prescribed glasses consistently — undercorrection may worsen progression

EDUCATE

- ✓ Refractive errors are correctable — not a disease
- ✓ Schedule and keep routine eye exams (children q1–2 yr, adults q2 yr, 40+ annually, >65 annually)
- ✓ Proper lens care: clean glasses with microfiber, wash hands before contact lens handling
- ✓ Reinforce 20-20-20 rule for screen use

REFER & COORDINATE

- ✓ Refer to optometrist for refraction and prescription
- ✓ Refer to ophthalmologist for surgical evaluation (LASIK, PRK, refractive lens exchange) or red-flag findings
- ✓ Coordinate vision screening in schools, occupational health, and well-adult exams

- ✓ Diabetic clients: ensure annual dilated eye exam — sudden refractive shifts can signal poor glycemic control

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CORRECTIVE LENSES · SURGICAL OPTIONS

How each is corrected

CONDITION	LENS TYPE	HOW IT WORKS	SURGICAL OPTIONS	KEY NURSING CONSIDERATIONS
Myopia (Nearsighted)	− Concave (minus / diverging)	Spreads light rays before they enter the eye so the focal point moves **back** onto the retina.	LASIK, PRK, SMILE, phakic IOL, orthokeratology (overnight rigid lenses)	Verify lenses are worn for driving; assess for high-myopia retinal detachment risk; encourage outdoor time in children to slow progression.
Hyperopia (Farsighted)	+ Convex (plus / converging)	Bends light rays inward earlier so the focal point moves **forward** onto the retina.	LASIK, PRK, refractive lens exchange, conductive keratoplasty	Monitor for angle-closure glaucoma risk (shallow anterior chamber); avoid mydriatics without HCP order; teach to report eye pain + nausea immediately.
Presbyopia (Age-related)	Reading / Bifocal / Progressive	Adds a magnifying segment to compensate for the lens's inability to accommodate. Multifocal contacts also available.	Monovision LASIK, refractive lens exchange, multifocal IOL (often combined with cataract surgery)	Fall-prevention teaching with bifocals (look *through* distance portion when descending stairs); ensure adequate task lighting; consider large-print materials.

Memory cue → Minus lens for Myopia (both have an "M"). Plus lens for Hyperopia ("+" pushes light *forward* like the "F" in Farsighted).

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NCLEX TEST TRAPS ⚠

What students mix up

✗ COMMON CONFUSION

"Nearsighted means you can't see things that are near."

The terminology is counterintuitive and is a frequent NCLEX trap.

✓ CORRECT FRAMING

"Nearsighted = sees
NEAR
well, distance is blurry."
MYOPIA
= M for "Misses far."

✗ COMMON CONFUSION

Confusing presbyopia with cataracts.

Both worsen with age — but the mechanism is different.

✓ CORRECT FRAMING

PRESBYOPIA
= lens stiffens (refractive, correctable with reading glasses).
CATARACT
= lens clouds (opacity, requires surgery).

✗ COMMON CONFUSION

Choosing "instill mydriatics" for a hyperopic patient with eye pain.

Hyperopic eyes have shallow anterior chambers.

✓ CORRECT FRAMING

Dilating drops can
PRECIPITATE ACUTE ANGLE-CLOSURE GLAUCOMA
. The priority action is to *hold* the drug and notify the HCP — NEVER instill without specific order.

✗ COMMON CONFUSION

"Refractive errors progress to blindness."

Students confuse refractive errors with degenerative eye disease.

✓ CORRECT FRAMING

Refractive errors are
FUNCTIONAL
, not degenerative. They are *correctable*. Worry instead about glaucoma, macular degeneration, diabetic retinopathy.

✗ COMMON CONFUSION

Selecting "no driving restrictions" for a patient with corrected myopia.

Students forget the correction is conditional.

✓ CORRECT FRAMING

Driving is safe
ONLY WHILE WEARING
prescribed corrective lenses. Most state licenses require this; without correction, the client may be legally restricted.

✗ COMMON CONFUSION

Telling a 42-year-old with new reading difficulty: "You have an eye disease."

This causes unnecessary alarm.

✓ CORRECT FRAMING

"This is
PRESBYOPIA
— a normal age-related change in the lens, not a disease. Reading glasses will help. Schedule a routine eye exam."

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PATIENT & FAMILY EDUCATION

Teach this, every visit

01 **20-20-20 Rule**

Every **20 minutes** of near work, look at something **20 feet** away for **20 seconds**. Reduces eye strain and accommodation fatigue.

02 **Routine eye exams**

Children q1–2 yr; adults 18–39 q2 yr; 40+ q1–2 yr; ≥65 yearly. Diabetic clients: **annual dilated exam** regardless of age.

03 **UV & outdoor protection**

UV-blocking sunglasses outdoors. In children, ≥2 hours/day of outdoor time may slow myopia progression.

04 **Contact lens hygiene**

Wash hands before handling; clean with prescribed solution (NEVER tap water or saliva); replace as prescribed; do **not** sleep in lenses unless approved.

05 **Lighting & ergonomics**

Use task lighting for reading. Keep screens 18–24 inches from eyes. Adjust font size — squinting is a cue to schedule an exam.

06 **Bifocal & stair safety**

Look *through the upper (distance) portion* of bifocals when going down stairs to prevent misjudging depth. A major fall-prevention point for older adults.

07 **Driving with corrective lenses**

Wear glasses or contacts **every time** driving is required by the prescription. Replace lenses promptly if broken.

08 **When to call the provider** 🚨

Sudden vision loss, flashes, floaters, "curtain" over vision, eye pain with nausea, halos around lights — these are **emergencies**, not routine refractive changes.

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MEMORY BOOSTERS

Mnemonics & pattern cues

MYOPIA

Misses Far

Myopia → **M**inus lens. The "**M**" means you **M**iss things far away — but see what's near just fine.

HYPEROPIA

Hold it Far

Hyperopia → patient **H**olds the page **F**ar away to read. Corrected with a "**+**" (plus / convex) lens.

PRESBYOPIA

Past Prime

"*Presbus*" = Greek for **old man**. After ~age 40, the lens hardens — reading glasses, bifocals, or progressives are the fix.

PATTERN RECOGNITION

`- (minus) for Myopia · + (plus) for "+arsighted" · Bifocals for the Birthday-40 lens`

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NCJMM CLINICAL JUDGMENT · 6-STEP WALKTHROUGH

From cue to evaluation

> ***Case:*** *A 58-year-old client presents to the primary care clinic stating, "I keep holding my phone farther and farther away to read, and my eyes feel tired by the end of the day. My mother had glaucoma — should I be worried?" The client has a history of well-controlled type 2 diabetes (most recent A1c 6.8%), wears no corrective lenses, and denies eye pain, flashes, floaters, halos, or sudden vision changes. Visual acuity: distance 20/25 OU; near (Rosenbaum at 14 in) — unable to read line 5.*

1 RECOGNIZE CUES

Age 58 · holds reading material farther away · eye fatigue with near work · **distance acuity 20/25 (good)** · **near acuity reduced** · diabetes · family history of glaucoma · NO red-flag symptoms.

2 ANALYZE CUES

The pattern (age >40, isolated near-vision blur, arms-length reading, normal distance vision) is the textbook presentation of **presbyopia**. Diabetes and family history of glaucoma are *relevant for monitoring* but do not match the current symptom cluster.

3 PRIORITIZE HYPOTHESES

#1 Most likely: Presbyopia (age-appropriate, classic presentation). **#2 Rule-out:** Diabetic refractive shift (hyperglycemia can cause transient blur — but A1c is well-controlled). **#3 Screen for:** Open-angle glaucoma given family history — asymptomatic but high-risk.

4 GENERATE SOLUTIONS

Reassure that presbyopia is a normal aging change, not a disease. Refer to optometry for refraction and reading glasses. Refer to **ophthalmology for annual dilated exam** (diabetes + glaucoma family history). Teach 20-20-20 rule and task lighting.

5 TAKE ACTION

Document visual acuity findings. Educate client using clear, non-alarming language: "This is a normal change called presbyopia." Provide written referral to optometry and ophthalmology. Reinforce red-flag symptoms requiring urgent return (sudden loss, flashes, eye pain).

6 EVALUATE OUTCOMES

Client verbalizes understanding that presbyopia is correctable and not the same as glaucoma. Client schedules optometry visit within 2 weeks and ophthalmology dilated exam within 1 month. Reports reduced eye strain after starting reading glasses at follow-up.